इंटरनेट मानक

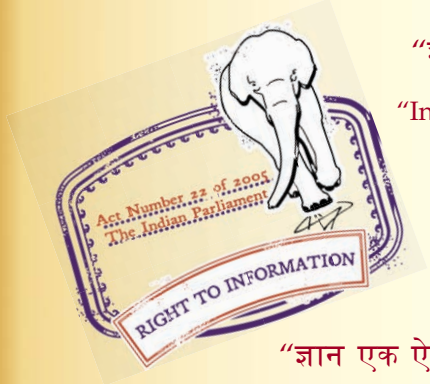
Disclosure to Promote the Right To Information

Whereas the Parliament of India has set out to provide a practical regime of right to information for citizens to secure access to information under the control of public authorities, in order to promote transparency and accountability in the working of every public authority, and whereas the attached publication of the Bureau of Indian Standards is of particular interest to the public, particularly disadvantaged communities and those engaged in the pursuit of education and knowledge, the attached public safety standard is made available to promote the timely dissemination of this information in an accurate manner to the public.

"जानने का अधिकार, जीने का अधिकार"
Mazdoor Kisan Shakti Sangathan
"The Right to Information, The Right to Live"

"पुराने को छोड नये के तरफ"
Jawaharlal Nehru
"Step Out From the Old to the New"

IS 9093 (1979): 100° countersunk nickel alloy rivets for aircraft [TED 14: Aircraft and Space Vehicles]



"ज्ञान से एक नये भारत का निर्माण"
Satyanarayan Gangaram Pitroda
"Invent a New India Using Knowledge"

"ज्ञान एक ऐसा खजाना है जो कभी चुराया नहीं जा सकता है"
Bhartṛhari—Nītiśatakam
"Knowledge is such a treasure which cannot be stolen"

BLANK PAGE

UDC 621·884·091·6 : [669·245] : 629·13

(Reaffirmed 2005)

Indian Standard

SPECIFICATION FOR 100° COUNTERSUNK NICKEL ALLOY RIVETS FOR AIRCRAFT

Aircraft and Space Vehicles Sectional Committee, EDC 74; Aircraft Fasteners Subcommittee, EDC 74 : 2 [Ref: Doc : EDC 74 (2457)]

1. Scope — Covers material, dimensions, identification and other requirements for nickel alloy rivets for use in aircraft.

2. Material

2.1 The preferred chemical composition for nickel alloys shall be as below:

Element	Composition, Percent	
	Alloy No. 1	Alloy No. 2
Cu	20 to 34	≤0·5
Si	≤0·5	≤1·0
Fe	≤2·5	≤5·0
Mn	0·3 to 2·0	≤1·0
Cr	—	18·0 to 21·0
Al	≤0·5	—
C	≤0·16	0·08 to 0·15
S	≤0·024	—
Co	—	≤0·5
Ti	—	0·2 to 0·6
Ni	Remainder	Remainder

2.2 The conditions of supply, heat treatment and mechanical characteristics of the wire used for manufacture of rivets shall be as given below:

Alloy No.	Condition as Delivered to Rivet Maker	Heat Treatment to be Given to Tensile Test Sample	Minimum* Tensile Strength of Test Sample, N/mm²	Minimum* Shear Strength, N/mm²
1	Annealed	None	490	350
2	Annealed	None	650	450

*Tensile strength and shear strength are included as alternatives.

Adopted 12 March 1979

[redacted] G1 2

INDIAN STANDARDS INSTITUTION
MANAK BHAVAN, 9 BAHADUR SHAH ZAFAR MARG
NEW DELHI 110002

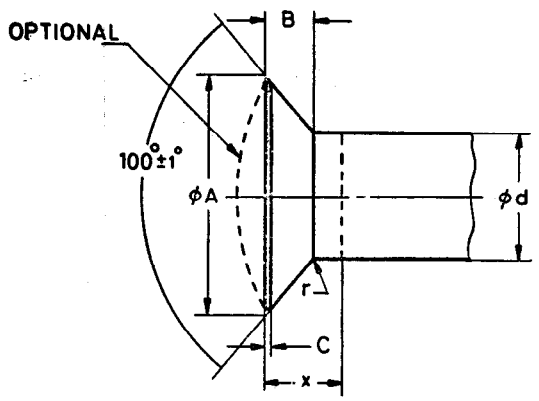
3. Dimensions

3.1 *Shank*

All dimensions in millimetres.

Nominal Shank Diameter, *d*	Tolerances on Shank Diameter
1·6	± 0·05
2·4	+ 0·06 − 0·04
3·2	± 0·05
4·0	+ 0·04 − 0·06
4·8	+ 0·03 − 0·07
5·6	+ 0·03 − 0·07
6·4	+ 0·03 − 0·07
8·0	0 − 0·10
9·6	0 − 0·10

3.2 *Head*



Countersunk head $x = 1{\cdot}3 + r + B$, where B is the height of the head. Within length x, the shank diameter value may increase to $d_{Max} + 0{\cdot}05$.

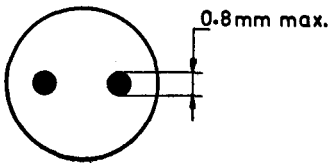
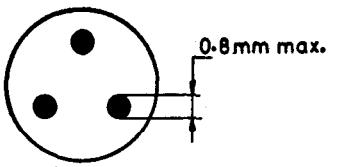
All dimensions in millimetres.

Nominal Diameter	A		B (Ref Only)	C (Ref Only)	Flushness Tolerance	r (Ref Only)
	Max	*Min*				
1·6	3·00	2·80	0·6	0·15	0·10	0·15
2·4	4·60	4·45	0·9	0·15	0·10	0·15
3·2	5·80	5·60	1·1	0·15	0·13	0·15
4·0	7·35	7·15	1·4	0·25	0·13	0·25
4·8	9·05	8·85	1·8	0·25	0·15	0·25
5·6	10·65	10·45	2·1	0·25	0·18	0·25
6·4	12·20	12·00	2·4	0·25	0·18	0·25
8·0	14·45	14·25	2·7	0·25	0·20	0·25
9·6	17·70	17·50	3·4	0·25	0·23	0·25

3.3 *Flushness Tolerances* — Suitable gauge shall be used for measuring the head flushness. The tolerances for the head flushness with respect to the metal skin line shall be as specified in **3.2.**

4. *Identification*

4.1 The rivets shall be marked on the head or on the end of the shank with symbols as indicated:

Alloy No.	Identification Symbol	
1		Indented
2		Indented

4.2 The symbols shall have a depth of approximately 0·2 mm.

5. Designation — Shall be designated by the rivet diameter, material alloy number and the IS No. of this standard.

Example:

A 100° countersunk rivet of diameter 6·4 mm, material alloy No. 2 and conforming to this Indian Standard shall be designated as:

Rivet 6·4 Alloy 2 IS : 9093

6. General Requirements

6.1 The condition of supply, heat treatment, mechanical properties of the rivets shall be as given below:

Alloy No.	Heat Treatment by Rivet Maker Before Delivery	Condition as Delivered	Condition at the Time of Closing	Condition When in Use
1	Annealed	As manufactured	As delivered	As closed
2	None	As manufactured	As delivered	As closed

6.2 General requirements for rivets, if not specified in this specification shall be as specified in IS : 9089-1979 'General requirements for rivets of aluminium and aluminium wrought alloys for aircraft'.

7. Packing — As agreed between the purchaser and the supplier.

8. Marking — All packages shall be marked with the following information:

a) Manufacturer's name or trade-mark,
b) Rivet designation,
c) Quantity, and
d) Particulars of Inspector or Inspector's stamp.

8.1 *ISI Certification Marking* — Details available with the Indian Standards Institution.

EXPLANATORY NOTE

This standard is one of the series of standards on aircraft rivets. In the preparation of this standard assistance has been derived from SP 87 and SP 88-1959 '100° countersunk head high nickel-copper alloy rivets' issued by British Standards Institution. This standard generally conforms to ISO/DIS 3229 'Aircraft-Nickel alloy rivets — Basic dimensions, materials and identification symbols' issued by International Organization for Standardization (ISO).

Printed at New India Printing Press, Khurja, India